News Release - Dec. 23, 2013

University Study Shows J-turns Eliminate Fatal Traffic Crashes
Cut Injury Crashes in Half

A University of Missouri-Columbia study of five intersections in Missouri where J-turns have been installed shows the alternative solutions to traditional intersections reduced fatal crashes by 100 percent and cut injury crashes in half. None of the five sites studied experienced a fatal crash after the J-turns were installed, the study reported. The evaluation period varied between one and three years depending on the site.

In addition, the study found that the number of crashes resulting in disabling injuries dropped by 86 percent, while the number of all crashes at the J-turn intersections declined by 35 percent.

"The numbers speak for themselves," said David Silvester, Central District Engineer for the Missouri Department of Transportation. "We know J-turns are not popular with some drivers, but they are the exact kind of safety solution we need to use in many instances. This report proves they reduce traffic deaths and injuries, and they will continue to be a tool we use to make our roads as safe as possible."

J-turns are an alternative to traditional roadway intersections on a four-lane highway. Instead of motorists crossing fast-moving lanes of traffic to get to the opposing lanes, drivers at a J-turn intersection turn right in the same direction of traffic, merge into the left lane, and then make a left turn in the direction they intend to travel. The main goal of J-turns is to reduce the frequency of angle accidents, which are often severe crashes.

The five-site analysis showed J-turns eliminated one of the most severe crash types – the left turn, right-angle crash - while right angle crashes decreased 80 percent.

"Our research concludes that the elimination of fatal crashes and a significant reduction in disabling injury crashes are substantial safety improvements offered by the J-turn design," said Dr. Praveen Edara, associate professor of the university's Department of Civil Engineering and chief author of the report.

Still, despite their safety benefits, the report acknowledges that J-turns are not universally popular among drivers. This summer, the university, in conjunction with MoDOT, conducted a public online survey to evaluate motorist perceptions about the safety and efficiency of the J-turns on Route 63 and Deer Park Road, near Columbia, Mo. These J-turns were constructed as a part of MoDOT's Route 63 and H interchange project and have been in use since the fall of 2012.

The public opinion returned in the survey was mixed. While the majority of those surveyed said the J-turns did not adversely affect their travel time, they did register some concerns. The most common complaints about the J-turns expressed in the survey were: merging difficulty after the U-turn, insufficient U-turn radius to accommodate large vehicles, general driver uncertainty and improper use of acceleration and deceleration lanes.

"We will continue to promote the safety benefits derived from using J-turns and work to inform drivers on how to properly navigate them," Silvester said.

Educational videos and other information on J-turns, including the full university study, can be found on MoDOT's website at www.modot.org/central.

# # #